



PATENT
Attorney Docket No. NEX-007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): Klein et al.
SERIAL NO.: 10/618,091 GROUP NO.: 3652
FILING DATE: July 11, 2003 EXAMINER: Not yet assigned
TITLE: Ultra-Thin Wafer Handling System

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicants hereby make of record the patents and publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. In accordance with the U.S. Patent Office's partial waiver of the requirement under 37 C.F.R. 1.98(a)(2)(i), only copies of the foreign patent documents and non-patent publications are enclosed.

REMARKS

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed (CHECK ONE):

- ☒ (1) within three (3) months of the **filing date** of a national application other than a continued prosecution application under 37 C.F.R. 1.53(d), or within three (3) months of the **date of entry of the national stage** as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing of the **first Office action** on the merits, or before the mailing of a **first Office action** after the filing of a request for continued examination under 37 C.F.R. 1.114; or
- ☐ (2) after the period defined in (1) but before the mailing date of a **final action** or a **notice of allowance** under 37 C.F.R. 1.311, and
- ☐ the requisite Statement is below, **OR**
- ☐ the requisite fee under 37 C.F.R. 1.17(p), namely **\$180.00**, is included herein, or

- ☐ (3) after the mailing date of a **final action** or **notice of allowance** but before the payment of the **issue fee**, **AND**
- ☐ the requisite Statement is below, **AND**
- ☐ the requisite petition fee under 37 C.F.R. 1.17(p), namely **\$180.00** is included herein.


It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.

STATEMENT

As required under 37 C.F.R. 1.97(e), Applicant(s), through the undersigned, hereby state either that [check the appropriate space only if either (2) or (3) is checked on the previous page and the Statement is required]:

- ☐ 1. Each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application **not more than three months** prior to the filing of the Information Disclosure Statement; or
- ☐ 2. No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this Statement after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to **any individual** designated in 37 C.F.R. 1.56(c) **more than three months** prior to the filing of the Information Disclosure Statement.

Respectfully submitted,



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FORM PTO - 1449 INFORMATION DISCLOSURE STATEMENT				ATTORNEY DOCKET NO.: NEX-007 APPLICANT(S): Klein et al. SERIAL NO.: 10/618,091 FILING DATE: July 11, 2003 GROUP: 3652			
U.S. PATENT DOCUMENTS							
EXAM. INIT.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE	
	A1	2,744,859	05/08/56	Rines			
	A2	3,317,410	05/02/67	Croll et al.			
	A3	3,438,668	04/15/69	Olsson et al.			
	A4	3,523,706	08/11/70	Logue			
	A5	3,539,216	11/10/70	Forcier			
	A6	3,652,442	03/28/72	Powers et al.			
	A7	3,809,642	05/07/74	Bond et al.			
	A8	3,902,615	09/02/75	Levy et al.			
	A9	3,972,424	08/03/76	Levy et al.			
	A10	4,002,254	01/11/77	Olofson			
	A11	4,008,815	02/22/77	Fisk			
	A12	4,118,058	10/03/78	Rahn et al.			
	A13	4,304,641	12/08/81	Grandia et al.			
	A14	4,391,694	07/05/83	Runsten			
	A15	4,405,435	09/20/83	Tateishi et al.			
	A16	4,437,961	03/20/84	Routh et al.			
	A17	4,526,670	07/02/85	Hajj			
	A18	4,586,743	05/06/86	Edwards et al.			
	A19	4,588,343	5/13/86	Garrett			
	A20	4,668,365	05/26/87	Foster et al.			
	A21	4,715,921	12/29/87	Maher et al.			
	A22	4,747,928	05/31/98	Takahashi et al.			
	A23	4,749,465	6/7/88	Flint et al.			
	A24	4,785,962	11/22/88	Toshima			
	A25	4,819,167	04/04/89	Cheng et al.			

EXAMINER	DATE CONSIDERED
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U.S. PATENT DOCUMENTS							
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A26	4,820,396	04/11/89	de Masi			
	A27	4,842,683	06/27/89	Cheng et al.			
	A28	4,872,947	10/10/89	Wang et al.			
	A29	4,892,753	01/09/90	Wang et al.			
	A30	4,911,597	03/27/90	Maydan et al.			
	A31	4,951,601	08/28/90	Maydan et al.			
	A32	4,962,441	10/09/90	Collins			
	A33	5,000,113	03/19/91	Wang et al.			
	A34	5,000,827	03/19/91	Schuster et al.			
	A35	5,013,385	05/07/91	Maher et al.			
	A36	5,046,909	09/10/91	Murdoch			
	A37	5,080,549	01/14/92	Goodwin et al.			
	A38	5,102,495	04/07/92	Maher et al.			
	A39	5,110,249	5/5/92	Norman			
	A40	5,117,121	05/26/92	Watanabe et al.			
	A41	5,143,593	09/01/92	Ueno et al.			
	A42	5,198,089	03/30/93	Brueggman			
	A43	5,199,483	04/06/93	Bahng			
	A44	5,200,049	04/06/93	Stevenson et al.			
	A45	5,215,619	06/01/93	Cheng et al.			
	A46	5,224,809	07/06/93	Maydan et al.			
	A47	5,227,708	07/13/93	Lowrance			
	A48	5,242,043	09/07/93	Sturm			
	A49	5,269,643	12/14/93	Kodama et al.			
	A50	5,280,983	01/25/94	Maydan et al.			

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EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A51	5,292,393	03/08/94	Maydan et al.			
	A52	5,308,431	05/03/94	Maher et al.			
	A53	5,315,473	05/24/94	Collins et al.			
	A54	5,324,155	06/28/94	Goodwin et al.			
	A55	5,330,301	7/19/94	Brancher			
	A56	5,344,542	09/06/94	Maher et al.			
	A57	5,345,999	09/13/94	Hosokawa			
	A58	5,354,715	10/11/94	Wang et al.			
	A59	5,355,066	10/11/94	Lowrance			
	A60	5,360,996	11/01/94	Nulman et al.			
	A61	5,362,526	11/08/94	Wang et al.			
	A62	5,363,872	11/15/94	Lorimer			
	A63	5,370,709	12/06/94	Kobayashi			
	A64	5,371,042	12/06/94	Ong			
	A65	5,377,816	1/3/95	Deligi et al.			
	A66	5,387,067	02/07/95	Grunes			
	A67	5,391,035	02/21/95	Krueger			
	A68	5,399,387	03/21/95	Law et al.			
	A69	5,421,987	06/06/95	Tzanavaras et al.			
	A70	5,425,611	6/20/95	Hughes et al.			
	A71	5,427,666	06/27/95	Mueller et al.			
	A72	5,443,995	08/22/95	Nulman			
	A73	5,444,597	08/22/95	Blake et al.			
	A74	5,447,409	09/05/95	Grunes et al.			
	A75	5,460,689	10/24/95	Raaijmakers et al.			

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EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A76	5,469,035	11/21/95	Lowrance			
	A77	5,492,566	02/20/96	Sumnitsch			
	A78	5,512,320	04/30/96	Turner et al.			
	A79	5,513,668	05/07/96	Sumnitsch			
	A80	5,514,258	05/07/96	Brinket et al.			
	A81	5,516,412	05/14/96	Andriacos et al.			
	A82	5,521,120	05/28/96	Nulman et al.			
	A83	5,527,605	06/18/96	Doessel et al.			
	A84	5,534,231	07/09/96	Savas			
	A85	5,538,390	07/23/96	Salzman			
	A86	5,556,147	09/17/96	Somekh et al.			
	A87	5,556,248	09/17/96	Grunes			
	A88	5,563,798	10/08/96	Berken et al.			
	A89	5,566,744	10/22/96	Tepman			
	A90	5,570,994	11/05/96	Somekh et al.			
	A91	5,579,718	12/03/96	Freerks			
	A92	5,597,460	01/28/97	Reynolds			
	A93	5,607,009	03/04/97	Turner et al.			
	A94	5,607,776	03/04/97	Mueller et al.			
	A95	5,618,338	04/08/97	Kurabayashi et al.			
	A96	5,618,388	04/08/97	Seeser et al.			
	A97	5,630,690	05/20/97	Salzman			
	A98	5,630,916	05/20/97	Gerrish et al.			
	A99	5,630,917	05/20/97	Guo			
	A100	5,636,964	06/10/97	Somekh et al.			

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EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A101	5,643,366	07/01/97	Somekh et al.			
	A102	5,643,427	07/01/97	Kobayashi et al.			
	A103	5,656,139	08/12/97	Carey et al.			
	A104	5,656,902	08/12/97	Lowrance			
	A105	5,658,442	08/19/97	Van Gogh et al.			
	A106	5,661,913	09/02/97	Kato et al.			
	A107	5,674,786	10/07/97	Turner et al.			
	A108	5,678,980	10/21/97	Grunes et al.			
	A109	5,683,564	11/04/97	Reynolds			
	A110	5,697,427	12/16/97	Ngan et al.			
	A111	5,697,748	12/16/97	Somekh et al.			
	A112	5,697,750	12/16/97	Fishkin et al.			
	A113	5,730,801	03/24/98	Tepman et al.			
	A114	5,740,062	04/14/98	Berken et al.			
	A115	5,746,460	05/05/98	Marohl et al.			
	A116	5,746,897	05/05/98	Heimanson et al.			
	A117	5,747,360	05/05/98	Nulman			
	A118	5,764,012	06/09/98	Lowrance			
	A119	5,780,357	07/14/98	Xu et al.			
	A120	5,784,238	07/21/98	Nering et al.			
	A121	5,788,453	08/04/98	Donde et al.			
	A122	5,788,799	08/04/98	Steger et al.			
	A123	5,789,878	08/04/98	Kroeker et al.			
	A124	5,795,355	08/18/98	Moran			
	A125	5,799,860	09/01/98	Demaray et al.			

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	A126	5,803,977	09/08/98	Tepman et al.			
	A127	5,810,937	09/22/98	Gupta et al.			
	A128	5,822,171	10/13/98	Shamouilian et al.			
	A129	5,824,197	10/20/98	Tanaka			
	A130	5,833,426	11/10/98	Marohl			
	A131	5,836,736	11/17/98	Thompson et al.			
	A132	5,838,121	11/17/98	Fairbairn et al.			
	A133	5,843,296	12/01/98	Greenspan			
	A134	5,844,195	12/01/98	Fairbairn et al.			
	A135	5,846,883	12/08/98	Moslehi			
	A136	5,851,602	12/22/98	Law et al.			
	A137	5,855,681	01/05/99	Maydan et al.			
	A138	5,861,086	01/19/99	Khurana et al.			
	A139	5,861,197	01/19/99	Law et al.			
	A140	5,865,894	02/02/99	Reynolds			
	A141	5,871,588	02/16/99	Moslehi et al.			
	A142	5,871,811	02/16/99	Wang et al.			
	A143	5,877,086	03/02/99	Aruga			
	A144	5,879,127	03/09/99	Grunes et al.			
	A145	5,882,165	03/16/99	Maydan et al.			
	A146	5,882,168	03/16/99	Thompson et al.			
	A147	5,893,966	04/13/99	Akram et al.			
	A148	5,896,877	04/27/99	Pirker			
	A149	5,905,302	05/18/99	Lane et al.			
	A150	5,932,077	08/03/99	Reynolds			

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U.S. PATENT DOCUMENTS							
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A151	5,935,330	08/10/99	Taniguchi			
	A152	5,967,578	10/19/99	Frey			
	A153	5,996,241	12/07/99	Thompson et al.			
	A154	6,017,437	01/25/00	Ting et al.			
	A155	6,022,417	02/08/00	Sumnitsch			
	A156	6,022,465	02/08/00	Ting et al.			
	A157	6,024,526	02/15/00	Slocum et al.			
	A158	6,027,631	02/22/00	Broadbent			
	A159	6,033,540	03/07/00	Kosaki et al.			
	A160	6,048,154	04/11/00	Wytman			
	A161	6,074,544	06/13/00	Reid et al.			
	A162	6,082,950	07/04/00	Altwood et al.			
	A163	6,099,702	08/08/00	Reid et al.			
	A164	6,099,712	08/08/00	Ritzdorf et al.			
	A165	6,103,085	08/15/00	Woo et al.			
	A166	6,103,628	08/15/00	Talich			
	A167	6,139,695	10/31/00	Washburn et al.			
	A168	6,139,703	10/31/00	Hanson et al.			
	A169	6,139,712	10/31/00	Patton et al.			
	A170	6,152,507	11/28/00	Pirker			
	A171	6,156,167	12/05/00	Patton et al.			
	A172	6,159,354	12/12/00	Contolini et al.			
	A173	6,162,344	12/19/00	Reid et al.			
	A174	6,167,893 B1	01/02/01	Taatjes et al.			
	A175	6,174,011 B1	01/16/01	Keigler			

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	A176	6,179,983 B1	01/30/01	Reid et al.			
	A177	6,193,859 B1	02/27/01	Contolini et al.			
	A178	6,197,181 B1	03/06/01	Chen			
	A179	6,198,616 B1	03/06/01	Dahimene et al.			
	A180	6,214,193 B1	04/10/01	Reid et al.			
	A181	6,215,321 B1	04/10/01	Nakata			
	A182	6,217,272	04/17/01	Felsenthal et al.			
	A183	6,224,670 B1	05/01/01	Ishida			
	A184	6,228,232 B1	05/08/01	Woodruff et al.			
	A185	6,228,233 B1	05/08/01	Lakshmikanthan et al.			
	A186	6,234,788	05/22/01	Lee			
	A187	6,236,555 B1	05/22/01	Leeser			
	A188	6,243,251 B1	06/05/01	Kanno et al.			
	A189	6,254,328 B1	07/03/01	Wytman			
	A190	6,254,742 B1	07/03/01	Hanson et al.			
	A191	6,254,760 B1	07/03/01	Shen et al.			
	A192	6,258,220 B1	07/10/01	Dordi et al.			
	A193	6,258,223 B1	07/10/01	Cheung et al.			
	A194	6,260,894 B1	07/17/01	Minnick et al.			
	A195	6,307,728 B1	10/23/01	Leeser			
	A196	6,328,858	12/11/01	Felsenthal et al.			
	A197	6,396,024	05/28/02	Doughty et al.			
	A198	6,430,468 B1	08/06/02	Tepman et al.			
	A199	6,530,733	03/11/03	Klein et al.			
	A200	6,550,158 B2	04/22/03	Doley et al.			

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EXAM. INIT.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE			
	A201	6,682,288	01/27/04	Klein et al.					
	A202	2002/0140148 A1	10/03/02	Aigner et al.					
FOREIGN PATENT DOCUMENTS									
EXAM. INIT.	DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG Y/N	
	B1	0 492 114 A1	07/01/92	EP			N	N (English Language Abstract)	
	B2	2 171 119 A	08/20/86	GB			N	Y	
	B3	63024632	02/02/88	JP			Y	Y	
	B4	64004472	01/09/89	JP			Y	Y	
	B5	01123068	05/16/89	JP			Y	Y	
	B6	01309961	12/14/89	JP			Y	Y	
	B7	03094070	04/18/91	JP			Y	Y	
	B8	03227536	08/10/91	JP			N	N (English Language Abstract)	
	B9	05171432	07/09/93	JP			Y	Y	
	B10	05339723	12/21/93	JP			Y	Y	
	B11	06063885	03/08/94	JP			N	N (English Language Abstract)	
	B12	06184741	07/05/94	JP			Y	Y	
EXAMINER				DATE CONSIDERED					



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OTHER ART, JOURNAL ARTICLES, ETC.		
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)	
	C1	"Automatic System for Single Wafer Reactive Ion Etching," IBM Technical Disclosure Bulletin, Vol. 33, No. 2, July 1990, pp. 239-242. (3 pages)
	C2	Gaulhofer et al., "Wafer Thinning and Strength Enhancement to Meet Emergency Packaging Requirements," IEMT Europe 2000 Symposium (IEEE/CPMT), April 6-7, 2000, Munich, Germany, Semicon Europe, pp. 21-27.
	C3	Haller et al., "High Frequency Performance of GE High Density Interconnect Modules," IEEE Transactions on Components, Hybrids, and Manufacturing Technology, Vol. 16, No. 1, February 15, 1993, pp. 1-5.
	C4	Hendrix et al., "Improvements in Yield by Eliminating Backgrind Defects and Providing Stress Relief with Wet Chemical Etching," http://www.hologenix.com/Article1.htm , printed June 30, 2003, 6 pages.
	C5	Young et al., "Thermal Modeling and Mechanical Analysis of Very Thin Silicon Chips for Conformal Electronic Systems," University of Arkansas, Fayetteville, AZ, 8 pages.

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EXAMINER	DATE CONSIDERED
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